

REMARKS

In the Office Action mailed 2 May 2003, the Examiner rejected claims 1-6, 15-19, and 24-25 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,848,060 to Dent, herein referred to as Dent. Applicant respectfully disagrees and offers the following remarks.

The Examiner contends that, *inter alia*, Dent teaches a satellite including a dual polarization receiving antenna that receives first and second polarized signals from a plurality of mobile terminals. However, when the passage cited by the Examiner (column 12, lines 60-65) is read in context, the citation clearly relates to communications between the satellite and the ground station. Therefore, Dent simply describes using a dual-polarized horn antenna on the satellite to facilitate communications between the satellite and the ground station.

In direct contrast, the invention of claim 1 goes further than the satellite/ground station dual polarization communication of Dent. Specifically, claim 1 claims "at least one orbiting satellite comprising a satellite dual-polarization receiving antenna, said satellite dual-polarization receiving antenna comprising multiple satellite antenna elements that receive first and second polarized signals from said plurality of mobile terminals" (emphasis added). Because Dent does not teach a satellite receiving first and second polarized signals from a plurality of mobile terminals, Dent cannot anticipate claim 1. For at least this reason, claim 1 is patentably distinct from the cited art.

Because Dent does not anticipate claim 1, Dent cannot anticipate claims 2-6, 15-19, and 24-25, which depend from claim 1. Therefore, claims 2-6, 15-19, and 24-25 are also patentably distinct from the cited art.

In addition to the above arguments, Applicant submits that claim 4 is also patentably distinct from the cited art. Claim 4 claims "multiple dual-polarization antenna feed elements ... located out of the focal plane of said reflector." The Examiner contends that item 470 of Figure 7 of Dent illustrates an antenna with multiple dual-polarization antenna feeds located out of the focal plane of the reflector. However, the antenna (470) of Figure 7 clearly shows that each antenna feed is located in the focal plane of the antenna. Further, in describing antenna 470, column 8, lines 17-19, simply discloses a "multi-beam satellite antenna 470" that receives "signals from a plurality of mobile phones distributed between various beams." Nothing in Dent describes antenna 470 as a dual-polarization antenna. Therefore, nothing in Dent indicates that the feeds of antenna 470 are dual-polarization antenna feeds or that the antenna feeds are located out of the focal plane of the reflector. For at least these reasons, claim 4 is patentably distinct from the cited art.

The Examiner also rejected claims 26-32 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,533,023 to Ohlson et al. (herein referred to as Ohlson) in view of U.S. Patent 5,966,102 to Runyon (herein referred to as Runyon) and further in view of Dent. Applicant respectfully disagrees.

As conceded by the Examiner on page 8 of the Office Action, Ohlson does not teach that each satellite comprises a multi-element, dual polarization receiving antenna comprising multiple satellite antenna elements that receive signals from a plurality of mobile terminals. Further, as discussed above, Dent also does not teach this limitation. Therefore, in order for a §103 rejection to withstand scrutiny, Runyon must teach dual-polarization communications between the satellite and multiple mobile terminals.

The Examiner contends that Runyon teaches at least two satellites each comprising a multi-element, dual-polarization receiving antenna that receives signals from a plurality of mobile terminals. However, as with Dent, Runyon simply shows dual-polarization communication between the satellite(s) and the ground station. Specifically, Runyon discloses that “dual polarized antennas have typically been used for communications between a satellite and an earth station” (column 2, lines 30-32, emphasis added). Nothing in Runyon, including the passage cited by the Examiner, teaches or suggests dual-polarization communications between the satellite and a plurality of mobile terminals.

It is clear from the above arguments that Ohlson, Runyon, or Dent, alone or in combination, do not teach “at least two orbiting satellites each comprising a multi-element, dual-polarization receiving antenna comprising multiple satellite antenna elements that receive signals from said plurality of mobile terminals,” as required by claim 26. For at least this reason, claim 26 is patentably distinct from the cited art.

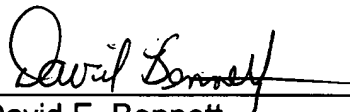
Because claim 26 is patentably distinct, claims 27-32, which depend from claim 26, are also patentably distinct. In addition, Applicant submits that claim 29 is also patentably distinct from the cited art. The Examiner contends that column 2, lines 30-41 of Runyon teaches an antenna with multiple dual-polarization antenna feeds located out of the focal plane of the reflector. However, the cited passage simply discloses that the “dual polarized antenna for a satellite application is commonly implemented as a multibeam antenna comprising separate feed element arrays and gridded reflecting optics having displaced focal points.” Runyon uses optics to displace the focal points. However, these displaced focal points are still reflector focal points. Therefore, a feed

element with a "displaced focal point" is not the same as an antenna feed located out of the focal plane of the reflector. Therefore, nothing in the cited art discloses "multiple dual-polarization antenna feed elements ... located out of the focal plane of said reflector" (emphasis added), as required by claim 29. For at least this reason, claim 29 is patentably distinct from the cited art.

The above arguments address the §102 and §103 rejections issued by the Examiner and clearly indicate that claims 1-6, 15-19, 24-25, and 26-32 are patentably distinct from the cited art. As such, Applicant respectfully requests reconsideration; claim allowance is solicited at the Examiner's earliest convenience. If any issues remain unresolved, Applicant asks that the Examiner contact the undersigned so that any such issues may be expeditiously resolved.

Respectfully submitted,

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